

## Letter To The Editor

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### THE SEVERE NAGAPATTINAM CYCLONE OF 30 NOVEMBER 1952

In a recent contribution Rao and Sen (1953) have given details of the cyclone in question including the air masses involved in it at the time of its formation as a depression as well as later when it rapidly intensified into a cyclone. According to them (1953) the cyclone originated as a depression in the south Bay of Bengal on the night of 27 November 1952 on the Inter Tropical Front between Tropical Maritime (*Tm*) and Equatorial Maritime (*Em*) air masses; further, the depression intensified rapidly into a severe cyclone with the development of a "Triple Point" when it moved westwards into the field of the Tropical Continental (*Tc*) current.

From the synoptic charts it is seen that there was a surge of *Tm* air into the south Andaman Sea in association with the movement of a low pressure wave from the east, and the same was responsible for widespread rain in the Nicobar Islands after the morning of 24 November 1952, rainfall being heavy at all the observatories between the mornings of the 26th and 27th. It would also appear from the charts that a depression had already formed by the 26th morning with centre at 0830 IST near Lat. 7°N, Long. 92°E. According to the observations of *S. S. Islami* (bound from Nagapattinam to Penang) which

are given in the table below, the depression had intensified into a cyclone by the midnight of that day.

2. From the observations it can be inferred that the ship passed through the inner storm area in front of the severe cyclone at 1750Z of 26 November 1952 and was near the centre and in the region of relatively less strong winds during about the next 2 hours; the ship again got into the inner storm area in the rear by 2010Z and into the outer storm area later.

3. Presumably the log of *S. S. Islami* was not available to Rao and Sen (1953) when they submitted their note for publication. The observations of *S. S. Worcestershire* quoted by Rao and Sen (1953) would not be against the presence of a severe cyclone with centre near Lat. 8½°N, Long. 88°E at about 0500 IST of the 28th. As the depression had already formed by the 26th morning and intensified into a cyclone by the midnight of the same day with centre near Lat. 7½°N, Long. 90½°E, it is necessary to re-examine the mechanism of its formation, particularly because the view point advanced by Rao and Sen (1953) is on the basis that the depression formed only on the 27th night.

4. It is known (Roy 1946, Desai 1951) that in the month of November there are usually *Em* and *TcTm* (Tropical Continental air which has travelled over sea) air masses

Date	Time (GMT)	Position		Bar. (Corrected) mb	Wind		Sea	Swell	Weather remarks
		Lat.	Long.		Direction	Force			
26-11-52	1350	07°32'N	89°58'E	1003.7	NNE	6/7	Mod.	Mod. from N	Passing showers
	1750	07°22'N	90°32'E	991.9	N	10	V.Ro.	Heavy from N	Heavy rain
	1850	—	—	990.9	NNW	7	Ro.	Mod. to heavy from NNW	—
	1910	—	—	990.2	WNW	5	Ro. to Mod.	Mod. to Heavy from W (confused)	Passing showers
	1950	—	—	990.9	WSW	5/7	Ro.	Mod. to heavy from W	—
	2010	07°30'N	90°45'E	991.5	SSW	11	V.Ro.	Heavy from SSW	Heavy rain
	2050	07°12'N	91°00'E	992.7	WSW	9/10			
27-11-53	0150	07°30'N	91°20'E	1003.1	SSW	7	Mod.	Mod.	Passing showers

in the south Bay and the south Andaman Sea to the south and north respectively of the ITF.  $T_m$  air mass can, however, be brought to the north of the ITF into the Andaman Sea and the south Bay in association with the typhoons or low pressure waves moving from east to west. With the incursion of the easterly to southeasterly  $T_m$  air into the south Andaman Sea and the south Bay with the movement of a low pressure wave from the east as stated earlier, a partition was probably established between it and the northeasterly to easterly  $TcTm$  air and the widespread rain in the Nicobar Islands after the 24th morning was due to this effect. The depression formed at the junction of the partition with the ITF. The distribution of the air masses at the time of the formation of the depression would thus appear to be as shown in Fig. 1.

5. This cyclone has thus formed initially in the same manner as the Masulipatam cyclones of October 1945 and 1949. On an examination of the synoptic charts for November 1935 and 1939 cyclones referred to by Rao and Sen (1953), it is seen that they also formed in about the same manner.

6. From the statements of Rao and Sen (1953) it would appear that on 26 November 1952 there was no  $Tc$  air mass in the south Bay and it came there only after the midnight of the 27th. As shown earlier, the depression had actually formed by the 26th morning and intensified into a severe cyclone by the midnight of the same day. Thus the formation of the depression and its subsequent intensification into a severe cyclone occurred without the presence of  $Tc$  air current in the field of the disturbance. Further the "Triple Point" on the ITF was between  $TcTm$ ,  $Tm$  and  $Em$  air masses and not between  $Tc$ ,  $Tm$  and  $Em$  air masses as assumed by Rao and Sen (1953).

7. According to Rao and Sen (1953) as the air masses involved in the cyclone were mainly  $Em$  and  $Tc$ , the distribution of rainfall was somewhat like that in the southwest monsoon cyclones with heavy rain in the southwest quadrant of the storm. In this connection a reference is invited to

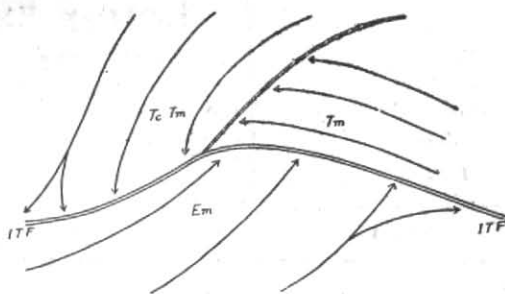


Fig. 1

paper by Roy (1946) in which the air masses present over India during the southwest monsoon season are described and to paper by Desai and Koteswaram (1951) in which mechanism of rainfall in the southwest quadrant of the monsoon depressions is discussed. It is not correct to say that the heavy rainfall in the southwest quadrant of the monsoon depressions is due to the interaction between  $Tc$  and  $Em$  air masses. On a reference to paper by Ramakrishnan (1937) in which he has discussed the rainfall distribution in some of the post monsoon depressions and cyclones between 1929 and 1935 including the November 1935 cyclone referred to by Rao and Sen (1953) it will also be seen that rainfall distribution in each case is quite peculiar due to various causes. In the Nagapattinam cyclone of 1952 some of the stations to the north of the track of the cyclone also recorded 3 to 4 inches rain on the morning of 1 December though convergence would appear to have considerably increased rainfall over a narrow belt to the south of the track.

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May 15, 1953.

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